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(54) **PERFORATED BAGS**

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(58) **Field of Classification Search**
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USPC 383/37, 38, 40; 206/554, 820
See application file for complete search history.

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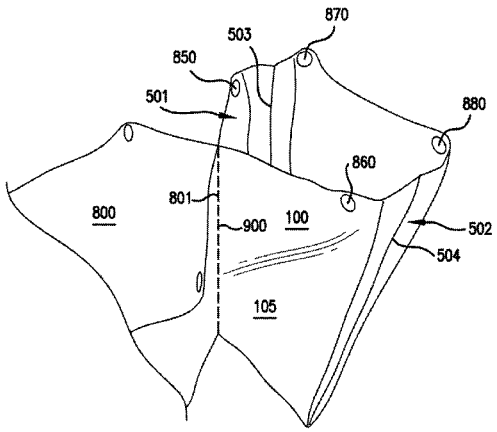
(57) **ABSTRACT**

The invention features a series of bags having perforations on the front and back panels that connect the back portion of one bag with the front portion of a second bag. The bags are aligned and features holes that are adapted to be received by a stand to support the bags. The bags are packaged and ready to load in a ready to use position. When the bags are separated from each other, the next bag in the continuous series will align and expand to open into a use position. The bags can be stacked on top of each other in a ready to use position.

17 Claims, 7 Drawing Sheets



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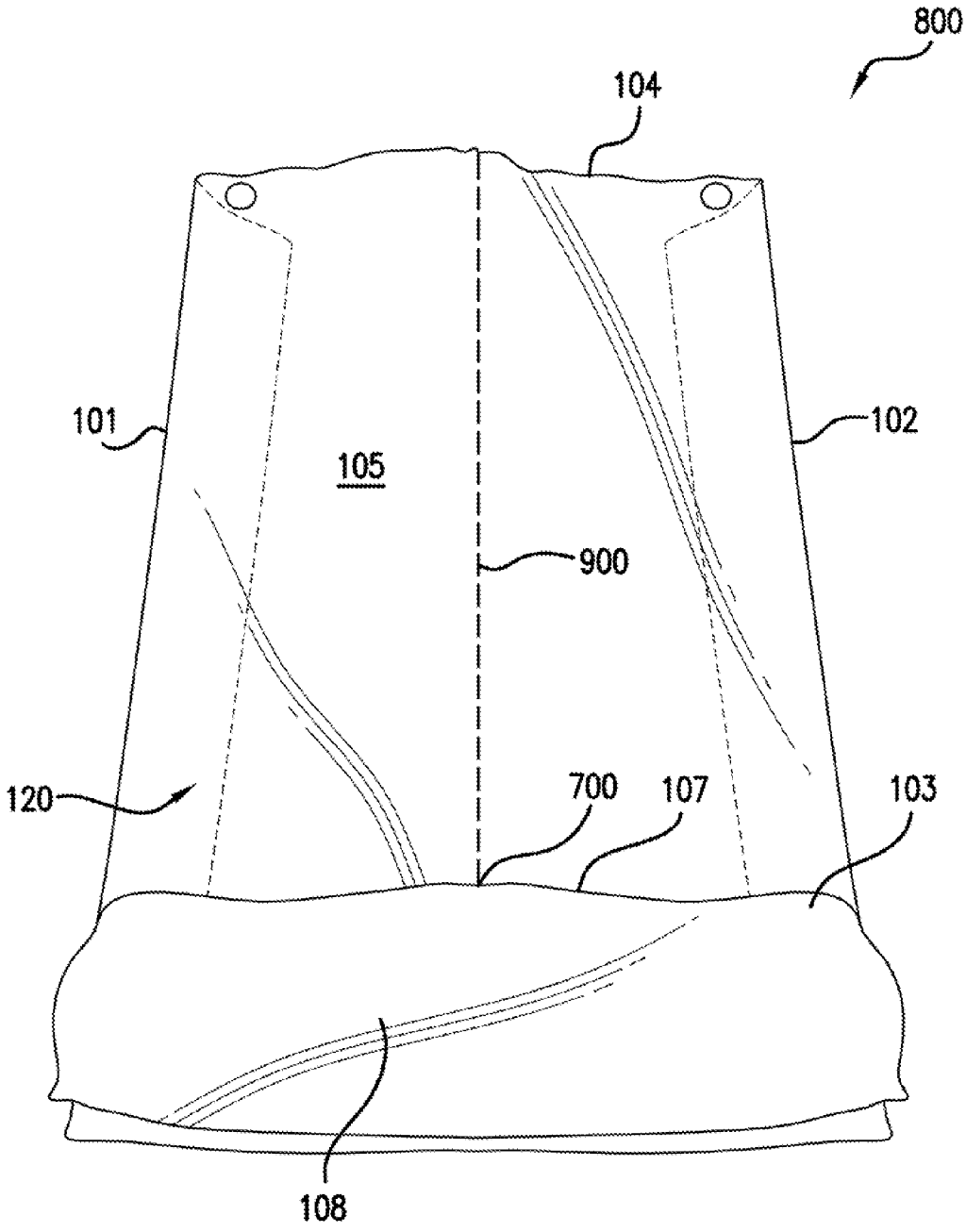

FIG. 1

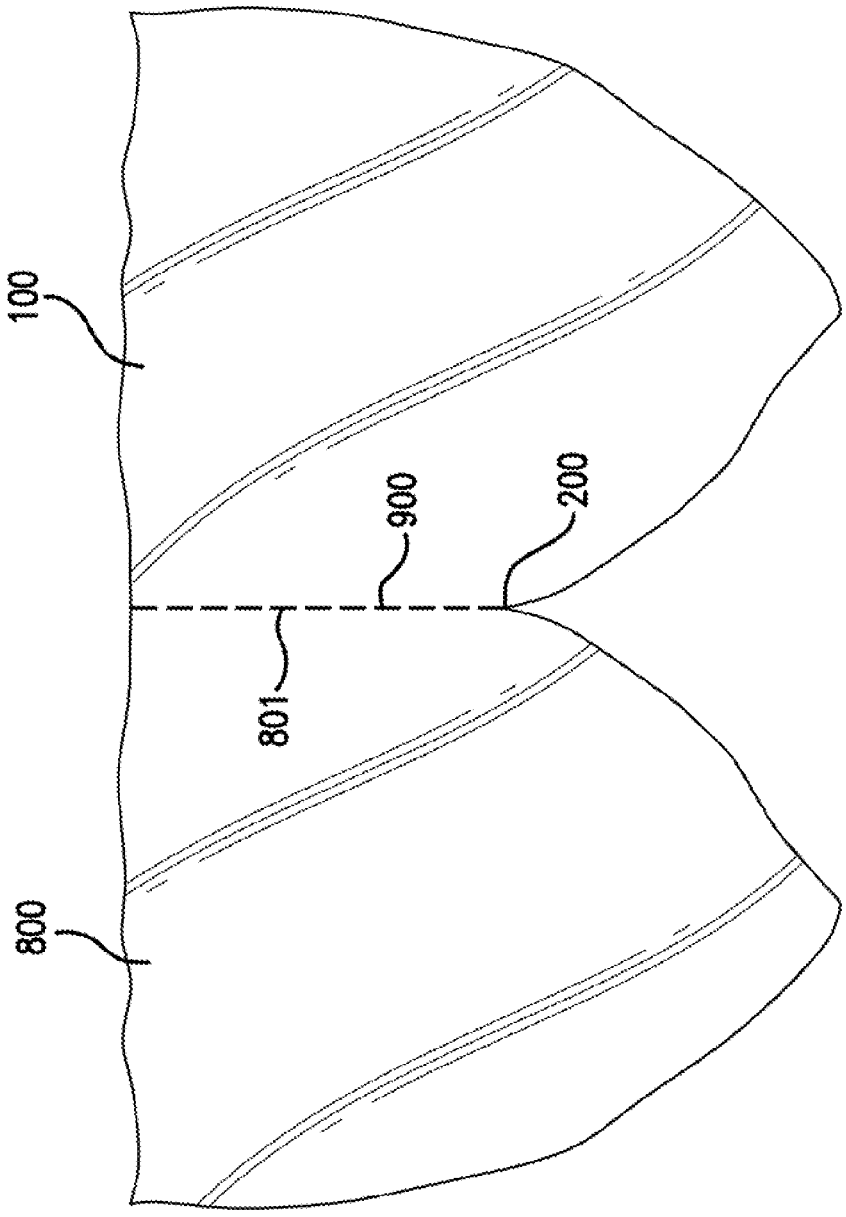

FIG.2

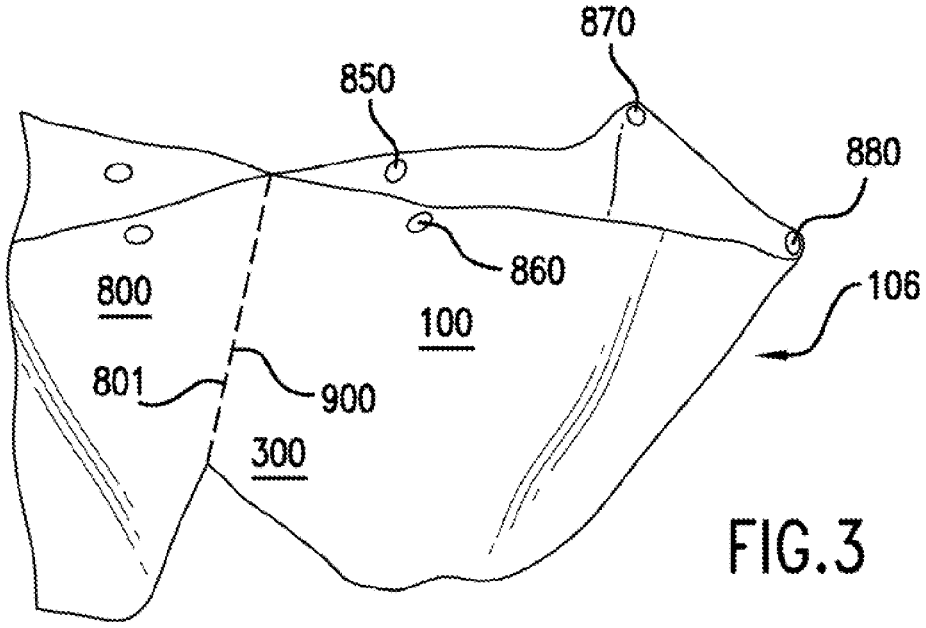
870
850
880
860
106
800
100
801
900
300

FIG.3

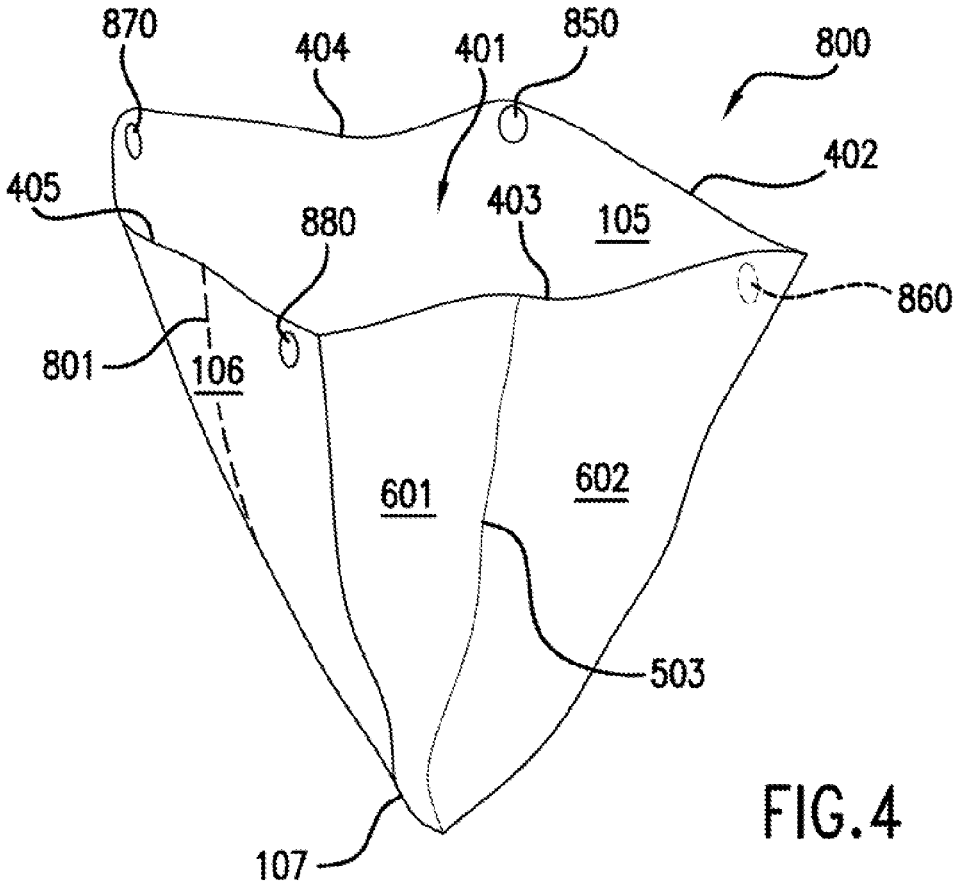
870
404
401
850
800
402
405
880
403
105
860
801
106
601
602
503
107

FIG.4

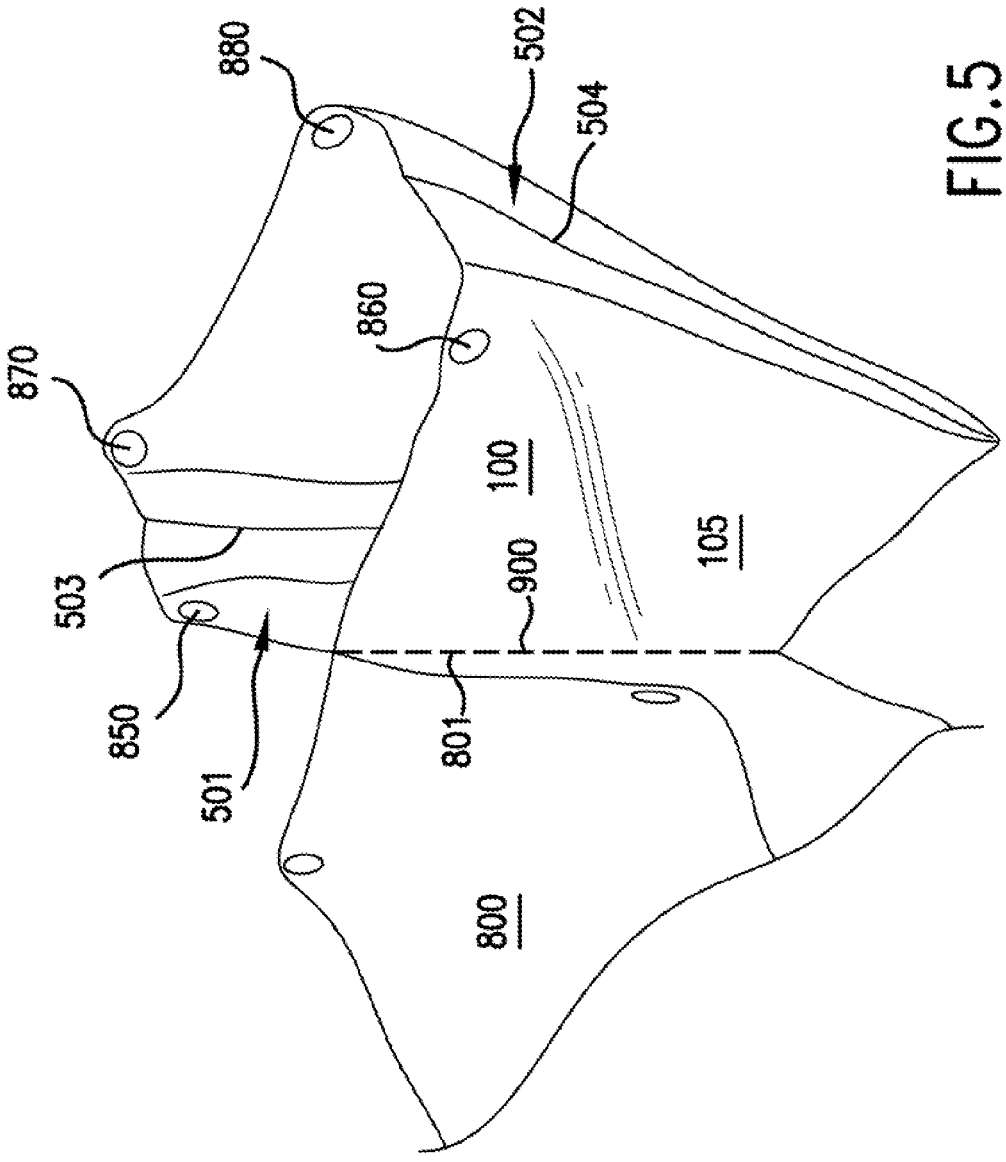

FIG.5

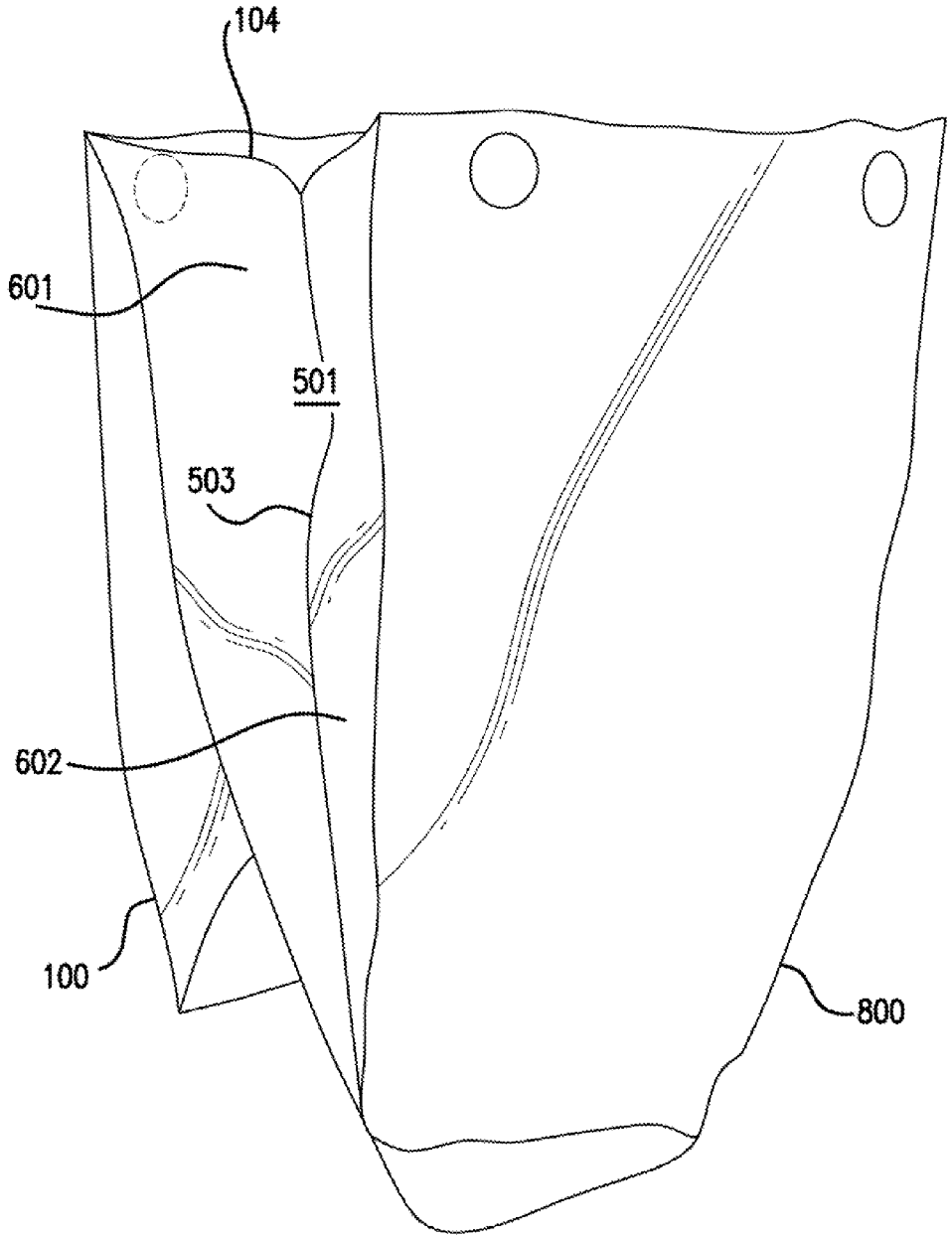

FIG.6

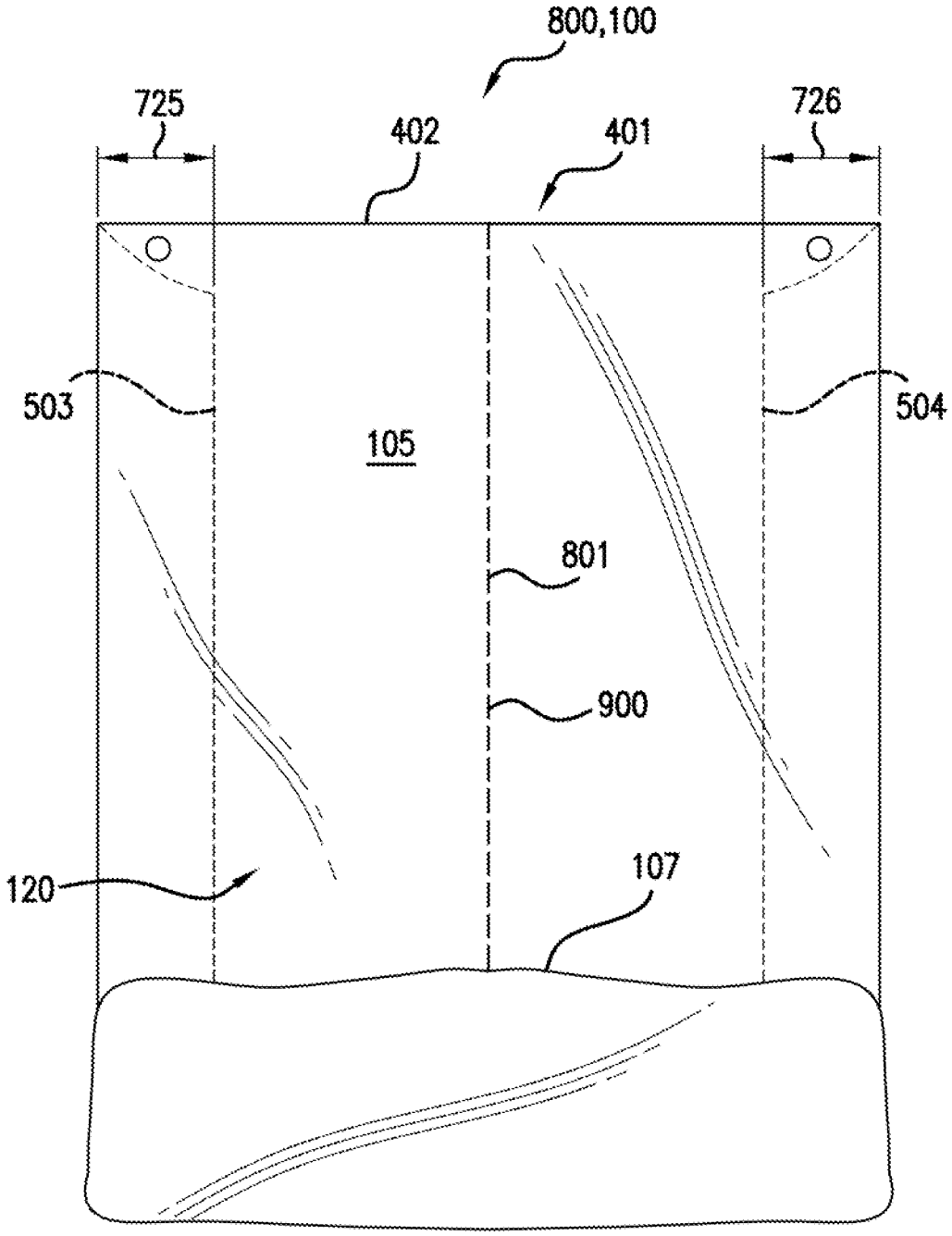

FIG.7

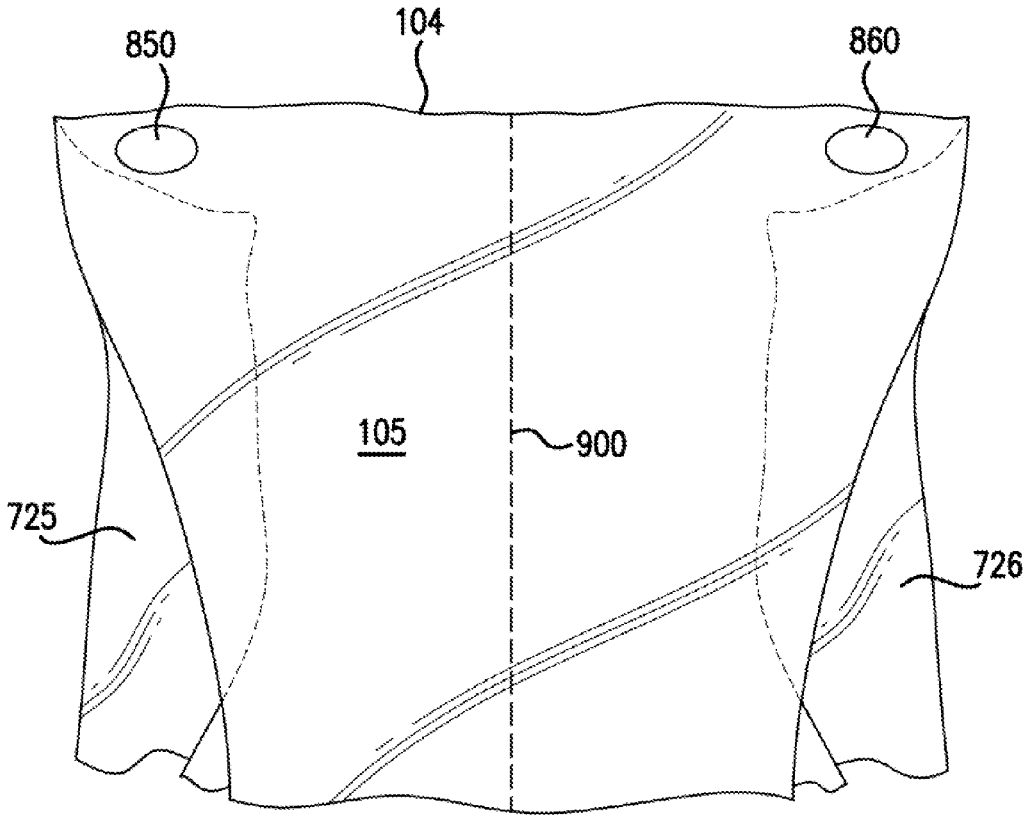

FIG.8

PERFORATED BAGS

FIELD OF THE INVENTION

The present invention relates, in general, to a series of bags and more particularly to a series of bags joined to each other via perforations along the front and back portion of the bags.

BACKGROUND OF THE INVENTION

Plastic bags are often used to transport items such as groceries or to store garbage. These bags should have a high load-carrying capacity, be simple and strong. Many stores offer bags at the checkout counter to customers. However, the bags often take additional time to remove because the bags are difficult to open. Also, the bags easily slip and are typically misaligned on their storage racks or in their storage containers. The bags waste space during storage and take time to position them on holders.

SUMMARY OF THE INVENTION

The present invention provides series of bags joined to each other via perforations along the front and back portion of the bags which provides easy opening and storage of the bags.

An aspect of an embodiment of the invention provides the series of bags connected in a manner such that the connection exerts a pressure on the bags that helps to align the bags.

A further aspect of an embodiment of the invention features holes on the bags that are adapted to be received by a stand to support the bags.

A further aspect of an embodiment of the invention features the series of bags connected in a manner such that the connection expands the folds of the bags to put the bags in an open position and ready for use.

Additional aspects, objectives, features and advantages of the present invention will become apparent from the following description of the preferred embodiments with reference to the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a closed bag showing the left side panel and right side panel tucked in and the bottom of the bag folded upwards.

FIG. **2** is an illustration of a first and second bag flattened and connected by a perforation on the back panel of the first bag and the perforation on front panel of the second bag.

FIG. **3** is a perspective side view of the first and second bags connected by perforations with the second bag in an open position.

FIG. **4** is a perspective side view of the bag in an open position.

FIG. **5** is an illustration of the second bag opening from the motion of the first bag being removed.

FIG. **6** is a perspective view of the connected first and second bag with a tucked in side panel on the first bag.

FIG. **7** is a front view of stacked bags.

FIG. **8** is a front view of a bag showing the perforation and first and second front panel holes.

DETAILED DESCRIPTION OF THE INVENTION

FIG. **1** is a perspective view of a closed first bag **800** showing the left side panel **501** and right side panel **504** tucked in and the bottom **103** of the bag folded upwards towards the top **104** of the bag. A first bag **800** and a second bag **100** are described; however, the continuous series of bags, as shown in FIG. **2**, have the same features and functions. FIG. **2** is an illustration of a first **800** and second bag **100** flattened and connected by a perforation **801** on the back panel of the first bag and the perforation **900** on front panel of the second bag.

The bags are preferably made from a plastic film. However, alternate known lightweight materials such as soft and flexible LDPE (Low Density Polyethylene) or, for strength, LLDPE (Linear Low Density Polyethylene) or HDPE (High Density Polyethylene) may be used. Biodegradable film can also be used. The top **104** of the bag has an open mouth end **401**. FIG. **4** is a perspective side view of the bag **800** in an open position. The bag **800** features a top front panel **105**, a back panel **106**, left side **101** and a right side **102**. The top front panel edge **402** on the top front panel **105**, the top left side panel edge **403**, the top right side panel edge **404** and the top back panel edge **405** form the open mouth end **401**. Items can be placed into the open mouth end **401** and supported by the bag **800**. For example, groceries or trash can be deposited in the open mouth end **401** and stored in the bag **800**. The bottom **103** of the bag **800** has a closed bottom end **107**. As items are placed into the bag, the items do not exit the bag at the bottom end **107** since the bottom end **107** is closed. Items can enter and exit the bag through the open mouth end **401**.

The film extending from the top left side panel edge **403** to the bottom end **103** of the bag forms a left side panel **501**, shown in FIG. **5**. FIG. **5** is an illustration of the second bag opening as the first bag is separated from the second bag. The film extending from the top right side panel edge **404** to the bottom end **103** of the bag forms a right side panel **502**. The left side panel **501** and right side panel **502** are the left and right sides of the bag, respectively. A first fold line **503** along the left side of the bag **101** centered on the left side panel **501** extends from the open mouth end **401** left side edge **403** to the closed bottom end **107**. The first fold line **503** divides the left side panel **501** in half. The right side panel **502** features a second fold line **504** along the right side **102** of the bag centered on the right side panel **502**. The second fold line **504** extends from the open mouth end **401** right side edge **404** to the closed bottom end **107**. The second fold line **504** divides the right side panel **502** in half. The left side panel **501** is tucked or folded in along the first fold line **503** such that the left side panel **501** is divided equally between the first fold line **503** into a first left side panel half **601** and a second left side panel half **602**, shown in FIG. **6**. FIG. **6** is a perspective view of the connected first and second bag with a tucked in side panel on the first bag. The right side panel **502** is tucked in along the second fold line **504** such that the right side panel **502** is divided equally between the second fold line **504** into a first right side panel half **410** and a second right side panel half **411**. The left side panel **501** and right side panel **502** tucked in portion forms a middle layer between the front panel **105** and back panel **106** when the bags are in a folded position since the tucked in areas are between the front and back panels. FIG. **7** is a front view of stacked bags, **800** and **100**. Tucked in left middle layer **725** extends from the left sides of the front and back panel to about ¼ to ½ across the front and back panels. Tucked in right middle layer **726** extends from the right sides of the front and back panel to about ¼ to ½ across the front and back panels. The middle layer's first fold line **503** and the second fold line **504** expand so that the front panel and back panel of the bag move apart from each other to open the bag.

The front panel **105** is the film on the front side **120** of the bag. The front panel **105** is the film above first and second fold lines **503**, **504** on the top surface of the bag. The front panel

extends the entire length from the bottom end **107** to the open mouth end **401**. The back panel **106** is the film on the back side **300** of the bag. The back panel **106** is the film below the first and second fold lines **503**, **504** on the bottom surface of the bag. The bottom panel extends the entire length from the bottom end **107** to the mouth end **401**.

The front panel **105** features front perforation **900** extending from the top of the front panel edge **402** to the middle area **200** of the front panel **105**. The middle area **200** is about half the length of the bag to allow the bottom end **107** of the bag to fold upwards making the bag shorter for folding, packaging and storing purposes. The folded bottom area **108** of the bag is shown in FIG. **1**. The front perforation **900** is a vertical line of small holes centered on the front panel of the bag. The front perforation **900** aids in separating the first bag from the previous bag and so on. The folded bottom area **108** is preferably folded to the bottom end **700** of the perforation. The folded bottom area **108** does not interfere with the perforated area and will unfold as items are added to the bag. The bags are connected in a continuous series. A first bag **800**, has a back perforation **801** extending vertically from the top edge of the first bag's top of the back panel edge **405** to the middle area **200** of the back panel **106**. The back perforation **801** of the first bag **800** aligns with the front perforation **900** of the second bag. The perforations **801**, **900** are the same length. The back perforation **801** is a vertical line of small holes centered on the back panel **106** of the first bag **800**. The back perforation **801** of first bag **800** is connected to the front perforation **900** of the second bag **100**, as shown in FIG. **3**. The front and back perforations **900**, **801** are substantially centered on the front and back panels, respectively. FIG. **3** is a perspective side view of the first **800** and second bags **100** connected by perforations **900**, **801** with the second bag **100** in an open position. When a pressure is exerted to remove the first bag, the connected first and second bags disengage at the front and back perforations. The front panel of the second bag opens or moves away from the back panel as the first bag is separated from the second bag.

FIG. **8** is a front view of a bag showing the perforation **900** and first and second front panel holes **850**, **860**. A first front panel hole **850** and a second front panel hole **860** are located substantially near a top edge area **104** of the front panel **105**. The holes are preferably circular and of a size to be received by a holder such as parallel bars or arms, for example. The holes are sized to receive arms that guide the bags along them. On the back panel **106**, a first back panel hole **870** and a second back panel hole **880** substantially near a top edge area **405** of the back panel. The holes **850**, **860** are aligned with the holes **870**, **880**. The first front panel hole **850** and the second front panel hole **860** are to left and right of the front perforation **900** and the first back panel hole **870** and the second back panel hole **880** are to left and right of the back perforation **801**. The holes are only through the front and back panels such that when the bags are positioned on a holder, the left top edge **403** and right top edge **404** are not received by a holder and so that they are free to expand to receive items. The holder does not extend through the left top edge and right top edge.

The bags are designed to be loaded on a bar design rack. They are packaged in a way that allows multiple bags to be stored in a ready to use position. While removing the first bag, the first bag's back perforation **801** will pull on the connected second bag's front perforation **900** causing the second bag to open. The user can disconnect the bags along the perforations **801**, **900**. The folded lines will expand as the first bag is opened making the bag ready to use. The bags will take up less space when stored since they can be stored in a ready to use stacked position, as described. The second bag will be in an open and ready to use position.

The invention has been described in detail with particular reference to certain preferred embodiments thereof, but it will be understood that variations and modifications can be effected within the spirit and scope of the invention.

The invention claimed is:

1. A continuous series of bags comprising,
- at least a first and a second bag each having an open mouth end,
- closed bottom end,
- a left side panel,
- a right side panel,
- a front panel on a front side of the bag, wherein the front panel extends from the bottom end to the mouth end,
- a back panel on the back side of the bag wherein, the back panel extends from the bottom end to the mouth end,
- wherein the front panel features a vertically positioned front perforation,
- wherein the back panel features a vertically positioned back perforation,
- wherein the vertically positioned back perforation of the first bag is connected to the vertically positioned front perforation of the second bag between the front and back panels, respectively and wherein the front panel and the back panel of each of the first and second bags are free of the front perforation and back perforation, respectively, once the first bag has been separated from the second bag.

2. The continuous series of bags of claim **1**, wherein the front perforation extends from the top of the front and to the middle area of the front panel.

3. The continuous series of bags of claim **1**, wherein the back perforation extends from the top of the back panel to the middle area of the back panel.

4. The continuous series of bags of claim **1**, wherein the left side panel is tucked in along a first fold line such that the left side panel is divided equally between the first fold line.

5. The continuous series of bags of claim **4**, wherein the right side panel is tucked in along a second fold line such that the right side panel is divided equally between the second fold line.

6. The continuous series of bags of claim **5**, wherein the left side panel and right side panel tucked in portion forms a middle layer between the front panel and back panel 'when the bags are in a folded position.

7. A continuous series of bags comprising:
- at Least a first and a second bag each having an open mouth end,
- closed bottom end,
- a left side panel having a first fold line extending along the left side of the bag from the open mouth end to the closed bottom end,
- a right side panel having a second fold line extending along the right side of the bag from the open mouth end to the closed bottom end,
- wherein the left side panel is tucked in along the first fold line such that the left side panel is divided equally between the first fold line,
- wherein the right side panel is tucked in along the second fold line such that the right side panel is divided equally between the second fold line,
- a front panel on a front side of the bag formed on the top sides of the first and
- second fold lines, the front panel extending from the bottom end to the mouth end,

a back panel on the back side of the bag formed on the bottom sides of the fold line first and second fold lines, the back panel extending from the bottom end to the mouth end,

wherein the front panel features a vertically positioned front perforation along the top of the front panel to the middle area of the front panel,

wherein the back panel features a vertically positioned back perforation along the top of the back panel to the middle area of the back panel, and

wherein the vertically positioned back perforation of the first bag is connected to the vertically positioned front perforation of the second bag between the front and back panels, respectively and wherein the front panel and the back panel of each of the first and second bags are free of the front perforation and back perforation, respectively, once the first bag has been separated from the second bag.

8. The continuous series of bags of claim **7**, further comprising a first front panel hole and a second front panel hole substantially near a top edge area of the front panel.

9. The continuous series of bags of claim **8** further comprising a first back panel hole and a second back panel hole substantially near a top edge area of the back panel.

10. The continuous series of bags of claim **9**, wherein the first front panel hole and the second front panel hole are to left and right of the front perforation and the first back panel hole and the second back panel hole are to left and right of the back perforation.

11. The continuous series of bags of claim **7**, wherein the front and back perforations are substantially centered.

12. The continuous series of bags of claim **7**, wherein the left side panel and right side panel tucked in portion forms a middle layer between the front panel and back panel when the bags are in a folded position.

13. The continuous series of bags of claim **7**, wherein when a pressure is exerted to remove the first bag, the connected first and second bags disengage at the front and back perforations.

14. The continuous series of bags of claim **7**, wherein the open month end of the second bag opens as the first bag is separated from the second bag.

15. A continuous series of bags comprising,

at least a first and a second bag each having an open mouth end,

closed bottom end,

a left side panel,

a right side panel,

a front panel on a front side of the bag, wherein the front panel extends from the bottom end to the mouth end,

a back panel on the back side of the bag, wherein the back panel extends from the bottom end to the mouth end,

a pair of front panel holes on the front panel,

a pair of back panel holes on the back panel,

wherein the front panel features a front perforation,

wherein the back panel features a back perforation,

wherein the back perforation of the first bag is connected to the front perforation of the second bag between the front and back panels, respectively,

such that when the first bag is moved away from the second bag, the front panel of second bag moves to an open position and wherein the front panel and the back panel of each of the first and second bags are free of the front perforation and back perforation, respectively, once the first bag has been separated from the second bag.

16. The continuous series of bags of claim **15**, wherein the left side panel and right side panel are tucked in along a first fold line and second fold line, respectively.

17. The continuous series of bags of claim **1**, further comprising a longitudinal axis extending from the open mouth end to the closed bottom end of the bags, wherein the front or back perforation length is substantially a length from the top of the longitudinal axis defined by the open mouth end to a middle area of the longitudinal axis.

* * * * *